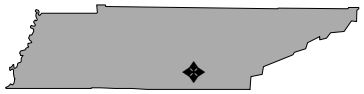
Size: 40,000 acres
Mission: Simulate flight conditions
HRS Score: 50.00; proposed for NPL in August 1994
IAG Status: None
Contaminants: VOCs, PCBs, heavy metals, acids, petroleum hydrocarbons, and asbestos-containing material
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $53.1 million
Estimated Cost to Completion (Completion Year): $54.4 million (FY2027)
Final Remedy in Place or Response Complete Date for All Sites: FY2003



Coffee and Franklin Counties, Tennessee

Restoration Background

Arnold Engineering Development Center is a test facility for the Air Force Material Command. Its primary mission is to simulate flight conditions in aerodynamic, propulsion, and space ground-testing facilities. The installation also conducts research and applies new technology to improve facilities and associated testing techniques and instrumentation.

Principal sites at the installation include a landfill, a chemical treatment plant, a main testing area, a leaching pit, a leachate burn area, and a fire training area. The chemical treatment plant, main testing area, and leaching pit contain soil and groundwater contaminated with volatile organic compounds (VOCs).

Between FY88 and FY94, the installation removed 37 underground storage tanks. During FY89, a RCRA Facility Assessment identified 110 solid waste management units. RCRA Facility Investigations (RFIs) were conducted at 13 of these units, and the need for additional sampling was identified for 57. In FY94, the additional sampling and RFI fieldwork were completed, Preliminary Assessments were completed for all remaining sites, and RCRA closure was approved for four hazardous waste facilities.

In FY95, several Interim Remedial Actions, the RFI Phase I Report, and confirmatory sampling for Site 19 were completed. The installation also implemented four Interim Actions, including low-temperature thermal treatment of soil contaminated with VOCs and installation of a groundwater extraction and treatment system. In FY96, the installation completed Remedial Designs (RDs) for modified RCRA landfill caps at Sites 1 and 3. These RDs constitute the final actions for those sites. The installation also implemented three interim corrective measures to treat contaminated groundwater.

In FY97, the installation constructed 36 wells to monitor groundwater for Site 19. At three other sites, the installation performed a corrective measures study (CMS) for final action and completed one of two planned landfill caps.

In FY91, the installation formed a technical review committee, which was converted to a Restoration Advisory Board (RAB) in FY95. Agenda items considered by the RAB include restoration updates, project status, and the Relative Risk Site Evaluation process.

FY98 Restoration Progress

The Site LF-3 landfill clay cap was completed as planned. Eight solvent recovery wells were added to the source removal/control system at Site WP-8.

Two groundwater source control wells were added to the existing system at Site WP-6. On the basis of plume movement and geographic information system (GIS) modeling, the groundwater monitoring program was expanded to include 62 private drinking water wells as potential down-gradient receptors. Tools and methods, such as seismic reflectance, were used to better identify groundwater monitoring locations, resulting in a reduced number of constructed wells and significantly improved data quality.

Phase I of a zero valent iron dechlorination (ZVID) pilot study and Phase I data collection for a phytoremediation pilot study were successfully completed. Three CMS studies began at Sites 6, 8, and 22. RFI work plans were drafted and submitted to EPA for approval.

RAB meetings are held quarterly. Efforts have begun to change the RAB into a Community Advisory Board.

Plan of Action

- Install public water connections for 17 residents down-gradient of the Site WP-6 plume
- Evaluate effectiveness of source containment at Site WP-6 in FY99
- Complete RFI No. 3 and No. 4 fieldwork and RFI No. 3 draft report
- Finish ZVID Phase II pilot study
- Complete CMS efforts for Sites LF-1 and LF-3
- Further delineate Site SS-22 plume migration pathway

FY99 Funding by Phase and Relative Risk